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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,113	10/14/2003	Grant Goracy	GORACY-42543	6787

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EXAMINER

CORRIGAN, JAIME W

ART UNIT PAPER NUMBER

3748

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/686,113

Applicant(s)

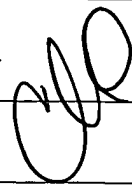
GORACY, GRANT

Examiner

Jaime W Corrigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15, 21-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (PN 6,343,581).

Regarding claims 1, 21 Suzuki discloses an elongated shaft (See Figure 2 (66)); a first (See Figure 2 (83)) cam lobe carried by the shaft; a second cam lobe (See Figure 2 (86)) carried by the shaft; and means (See Figure 3 (90), Figure 5 (96), Abstract, Column 4 Lines 32-67, Column 5 Lines 1-19) for locking the first and second cam lobes to the shaft; wherein either the first or second cam lobe comprises an intake cam lobe (See Figures 1, 2 (66), (59)) associated with an intake valve of an engine, and the other cam lobe (See Figure 1 (81), (72), Column 3 Lines 59-67, Column 4 Lines 1-3, 16-31) comprises an exhaust lobe associated with an exhaust valve of an engine; and wherein the first and second cam lobes are selectively (See Abstract, Column 1 Lines 56-63) rotatable relative to one another and selectively locked in place relative to one another, whereby a displacement angle between the cam lobes can be selectively adjusted.

Regarding claim 2 Suzuki discloses a drive timing gear (See Figure 2 (51)) assembly carried by the shaft and associated with the first and second cam lobes.

Regarding claim 3 Suzuki discloses the drive/timing gear assembly includes a gear and a hub fastened to one another (See Figure 2 (51), (87)).

Regarding claim 4 Suzuki discloses either the first or second cam lobe comprises an intake cam lobe (See Figures 1, 2 (66), (59)) associated with an intake valve of an engine, and the other cam lobe (See Figure 1 (81), (72)) comprises an exhaust lobe associated with an exhaust valve of an engine.

Regarding claims 5, 23 Suzuki discloses indicia associated with each of the first and second cam lobes for determining the displacement angle of the cam lobes (See Figure 2 (85)).

Regarding claim 6 Suzuki discloses means (See Figure 3 (90), Figure 5 (96)) for locking the first and second cam lobes to the shaft.

Regarding claims 7, 24 Suzuki discloses the locking means comprises a locking nut (See Figure 2 (84)) threadedly received onto the shaft.

Regarding claims 8, 25 Suzuki discloses the shaft includes an externally threaded portion (See Figure 2 (84)) for receiving the locking nut, and a shoulder (See Figure 2 (85)) on an opposite end thereof, whereby as the locking nut is tightened onto the shaft, the shoulder compresses the first and second cam lobes (See Figure 2 (83), (86)) against a drive/gear (See Figure 2 (51)) assembly so as to lock the first and second cam lobes relative to one another.

Regarding claims 9, 26 Suzuki discloses a pin (See Figures 3, 5 (90), (96)) insertable through a drive/gear assembly and into either the first or second (See Figure 2 (83), (86)) cam lobe for setting the position of the first or second cam lobe relative to the drive/gear (See Figure 2 (51)) assembly .

Regarding claims 10, 27 Suzuki discloses an inner shaft (See Figure 3 (113)) extending through the elongated shaft for attachment to an engine block.

Regarding claim 11 Suzuki discloses the elongated shaft (See Figure 2 (66)) comprises first and second shaft sections, the first cam lobe (See Figure 2 (83)) extending from the first shaft section, and the second cam lobe (See Figure 2 (86)) extending from the second shaft section, and wherein the shaft sections are rotatably associated with one another and selectively locked in place relative to one another (See Abstract, Column 1 Lines 56-63).

Regarding claim 12 Suzuki discloses the first shaft (See Figure 3 (113)) section includes a shaft extending therefrom, and the second shaft (See Figure 2 (66)) section includes a hollow sleeve extending therefrom and configured to accept the shaft therein.

Regarding claim 13 Suzuki discloses means for locking (See Figure 5 (105)) the first and second shaft sections relative to one another.

Regarding claim 14 Suzuki discloses the locking means comprises a fastener (See Figure 5 (84)) attachable to the first and second shaft sections.

Regarding claim 15 Suzuki discloses the first (See Figure 3 (113)) and second shaft (See Figure 2 (66)) sections include hollow, internally threaded (See Figure 5 (93)) portions that receive the fastener.

Regarding claim 22 Suzuki discloses a drive timing gear assembly (See Figure 2 (51)) comprising a gear and hub carried by the shaft (See Figure 2 (66)) and associated with the first and second cam lobes.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Methley et al. (PN 6,725,817).

Regarding claim 16 Methley discloses a first (See Figure 1 (12)) shaft section having a cam lobe (See Figure 1 (16)) extending therefrom; a second shaft (See Figure 1 (14)) section having a cam lobe (See Figure 1 (18)) extending therefrom; and means for locking (See Figure 1 (20)) the first and second shaft sections relative to one another; wherein either the first or second cam lobe comprises an intake cam lobe associated with an intake valve of an engine (See Column 5 Lines 36-45), and the other cam lobe comprises an exhaust lobe associated with an exhaust valve of an engine (See Column 5 Lines 36-45); and wherein the first and second shafts are selectively (See Abstract, Column 2 Lines 51-67, Column 3 Lines 1-9, Column 5 Lines 21-24) rotatable relative to one another and selectively locked in place relative to one another, whereby a displacement (See Abstract, Column 2 Lines 51-67, Column 3 Lines 1-9, Column 5 Lines 21-24) angle between the cam lobes can be selectively adjusted.

Regarding claim 17 Methley discloses a drive/timing gear assembly comprising a gear (See Figure 1 (32)) and a hub (See Figure 1 (38), (40)) attached to either (See Column 2 Lines 51-67, Column 3 Lines 1-9) the first or second (See Figure 1 (12), (14)) shaft section.

Regarding claim 18 Methley discloses indicia (See Figure 3 (44)) associated with each of the first and second shaft (See Figure 1 (12), (14)) sections for determining the displacement angle of the cam lobes (See Figure 1 (16), (18)).

Regarding claim 19 Methley discloses the first shaft (See Figure 1 (14)) section includes a shaft extending therefrom, and the second shaft (See Figure 1 (12)) section includes a hollow sleeve extending therefrom and configured to accept the shaft therein.

Regarding claim 20 Methley discloses the first (See Figure 1 (14)) and second shaft (See Figure 1 (12)) sections include hollow, internally threaded portions, and wherein the locking means comprises a fastener (See Figure 1 (20)) received within the first and second shaft sections.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsunaga (PN 5,855,190), Elrod et al. (PN 5,253,546) disclose similar adjustable camshafts.

Any inquiry concerning this communication from the examiner should be directed to Examiner Jaime Corrigan whose telephone number is (703) 308-2639. The examiner can normally be reached on Monday - Friday from 8:30 a.m. – 6:00 p.m. 2<sup>nd</sup> Friday off.

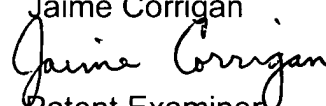


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9306.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

JC

Jaime Corrigan  
  
Patent Examiner

May 31, 2004

Art Unit 3748

  
THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
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